

are on an alloy of palladium with silver. There is a contrivance for setting the train of prisms in motion, the milled head which moves the prisms being close to the eye-piece of the telescope, and thus completely under the command of the observer. Though every part of the instrument has been made as light as it well could be consistently with strength, the instrument weighs rather more than 140 pounds.

*On a Spectrometer.* By John Browning, Esq.

Several months since Colonel Campbell suggested to me a simple method of mapping out the spectrum by attaching a quick-threaded screw to the slow-motion screw of a fine micrometer. I regret that so long a time should have elapsed before I saw the full value of this ingenious plan. I have now the pleasure of exhibiting a contrivance made on this plan; it will be seen that the contrivance can be attached to an ordinary micrometer; a quick thread carries a small frame between brackets, similar to the carrier of the dividing point of an ordinary dividing-engine. The method of using this contrivance is as follows: A piece of smoked glass is inserted in a metal frame under the pointer; on bringing the micrometer-wires to coincide with any line, a corresponding line can be made by a stroke of the pointer on the smoked glass, and this proceeding can be carried on with as many lines as may be in the field of view. When used on an automatic spectroscope, the prisms should be moved, and the mapping continued until as many lines are registered as the glass will contain. To avoid loss of time in the quick-threaded screen, the carriage is kept to one bearing by the pressure of a spring. After taking the glass out of the frame, it may be varnished in a manner similar to that employed for varnishing photographic negatives.

*Phenomenon observed at Sea.* By Commander H. P. Knevitt.

(Communicated by Rear-Admiral Richards, Hydrographer.)

A phenomenon having been seen from this ship when on the passage from Manzanilla to this place, I think it advisable to make it known at once, instead of waiting the transmission of my remark-book at the end of the year.

On the 16th May, 1872, at 2<sup>h</sup> 45<sup>m</sup> A.M. (the weather having been squally since midnight) a phenomenon was seen in the heavens at an altitude of about 50° and bearing east of compass; the ship at the time being in lat. 14° 55' N. and Long. 99° 58' W.

I did not see it myself, but the following is a description given of it by Lieutenant Cecil G. Horne, who was officer of the watch:—

“Attention was first drawn by a very bright flash, resembling a small flash of vivid lightning, but being much more solid, and

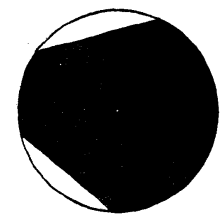
lasting 4 to 5 seconds; the passage of the luminous body was towards the horizon for a short distance (say  $3^\circ$  or  $4^\circ$ ), in a zig-zag course; it then appeared to burst and throw off a tail such as a comet has; the tail forming a ring and spreading itself round the body, till the whole had very much the appearance of a large Catherine wheel; it then gradually faded out of sight, having been visible from first to last, about 10 to 15 minutes."

H.M.S. "Fawn," Panama,  
11th June, 1872.

### Observation of Transit of *Jupiter's fourth Satellite*.

By G. W. Roberts, Esq.

March 26th, 1873. Observed *Jupiter* about 8 P.M. and found the fourth satellite on the disk. I thought at first it must be a shadow, but on referring to *Nautical Almanac* found that it was the fourth satellite itself. A friend was observing with me, and we both agreed that it was a very intense black, and also was not quite round. We each made independent drawings, which agreed perfectly, and consider that the observation was a perfectly reliable one. The shadow appeared not quite round, but two segments were wanting (see engraving). We could not imagine that such an intense black object could be visible when off the disk, and waited with some impatience to see the emersion, but were disappointed by fog which came on just at the critical time. The satellite when on the disk seemed larger than when off the disk and shining brightly at ordinary times.



Telescope 8-inches aperture, achromatic powers 135, 249, 368, and 533. Definition very good.

Should be glad to hear if any one saw the emersion, and could see the satellite with any small aperture.

April 7th. Observed *Jupiter* with 8 inches aperture, and the fourth satellite was very faint indeed.

### Recent Measures of $\xi$ *Ursæ Majoris*, $\zeta$ *Canceri*, and $\mu_2$ *Boötis* ( $\Sigma$ 1938). By J. M. Wilson, Esq.

The following measures of these binaries have been obtained during the last few days of March and the first few days of April. It may be interesting to compare them with the ephemerides published in previous numbers of the *Monthly Notices*.

	Position.	Distance.	Epoch.
$\xi$ <i>Ursæ</i>	$3^\circ 93'$	$0''.90$	1873.22
$\zeta$ <i>Canceri</i> A.B.	$150^\circ 9'$	$0.5$ to $0.6$	73.22
$\mu_2$ <i>Boötis</i>	$151^\circ$	$0.4$ to $0.5$	73.25

The two former positions are the means of 25 and 23 observations respectively made on five nights by Mr. Seabroke and myself; the third is the mean of four readings by the same observers.

Temple Observatory, Rugby.